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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,711	12/12/2005	Goran Berglund	024445-538	5477
55694 7590 11/20/2007 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER YEE, DEBORAH	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 11/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/519,711	Applicant(s) BERGLUND, GORAN	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5-23-07; 12-30-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6 to 13 and 15 to 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6475,307 (hereinafter Nystrom) in view of US Patent 5,241,748 (hereinafter Ishida'748) or US Patent 5,308,089 (hereinafter Ishida'089).

3. Nystrom in claim 2 of columns 5-6 discloses a stainless steel alloy having a composition and a martensitic microstructure dispersed with quasicrystalline particles that meets the recited claims. Moreover, Nystrom on lines 5-15 and 46-64 in column 1 teaches processing steel alloy in the shape of wire, tube, bar and strip for further use in various vehicle and automotive components that would meet the structural limitations recited by claims 10 to 13.

4. Even though Nystrom does teach nitriding stainless steel to exhibit a hardened surface layer with a hardness of at least 1200 HV as recited by claim 1, such would not be patentable difference. Note that it is well known and conventional practice to hardened surface of martensitic stainless steel for automotive components to increase wear resistance, durability, and hardness. See Ishida'748 in column 1 and claims 1 and 5 to 10 in columns 5-6 teaches plasma nitriding martensitic stainless steel compression rings for internal combustion engines to increase wear resistance and provide a

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hardness of greater than Hv 700; and Ishida'089 in columns 1-2, lines 5 to 27 in column 4 and claims 2 to 4 in column 8 teaches plasma nitriding martensitic stainless steel cylinders and piston rings for gasoline engines to improve wear resistance and provide a hardness of Hv 900 to 1,300 Hv.

5. Since wear resistance and hardness would be desirable properties sought by Nystrom when using steel for certain automotive application, then it would be an obvious modification well within the skill of the artisan to incorporate the nitriding step to produce no more than the known and expected effect from such additional process step.

6. Even though a hardened surface layer having a thickness of about 0.5 mm as recited by claim 9 and a hardness at a surface of the stainless steel is at least twice that of a hardness of at 0.5 mm into a matrix of the stainless steel as recited by claim 8 are not taught by prior art, such would not be a patentable difference since depth and level or hardenability would be a matter of choice and routine optimization well within the skill of the artisan and productive of no new and unexpected results.

7. In addition, Ishida'748 in claims 1 and 5 to 10 teach subjecting martensitic stainless steel to plasma nitriding at a temperature of 500C which is within the claimed temperature range of 450 to 580C. Even though a time period of 1 to 40 hours in a plasma nitriding atmosphere as recited by claim 15 is not taught by prior art, such would be a patentable difference since it would be a matter of choice and routine optimization well within the skill of the artisan to determine time frame depending on the desired level and depth of hardness sought. Also Ishida'748 teaches a hardness level of at least

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700Hv and Ishida '089 teaches a hardness level of Hv 900 to 1300 that would suggest a hardness of at least 1200 Hv recited by claim 16.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,475,307 (hereinafter Nystrom) in view of US Patent 5,241,748 (hereinafter Ishida'748) or US Patent 5,308,089 (hereinafter Ishida'089) as applied to claims 1, 6 to 13 and 15 to 17 above, and further in view of WO 01/79585 (hereinafter WO'585).

9. Nystrom teaches martensitic stainless steel alloy that meets the claimed composition, and in view of Nystrom'307 and/or Nystrom'089, it would be obvious to deposit a wear resistant coating by plasma nitriding to form a hardened nitride surface layer. Moreover, it would be an obvious modification to deposit an additional wear resistant coating when higher wear resistance is desired, as evident by the English abstract of WO'585.

10. The unapplied references have been cited to further depict the state of the art in plasma (ion) nitriding stainless steel.

Claim Objections

11. Claim 1 is objected to because of the following informalities: Second to last line of claim 1 should be recited in past perfect tense. Instead of "wherein said stainless steel after nitriding exhibits a hardened surface layer", it is recommended to use language such as ---wherein said stainless steel having been nitrided to exhibit a hardened surface layer---. Appropriate correction is required.

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Specification

12. The disclosure is objected to because of the following informalities: The term "tenifer" on line 6 on page 2 of Applicant's specification appears to be a typo-error.

Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/